



## SEQUENCE LISTING

&lt;110&gt; Gijzen, Mark

&lt;120&gt; Soybean Seed Coat Peroxidase Structural Gene And Regulatory Region

&lt;130&gt; 76-105

&lt;140&gt; US 08/939,905

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&lt;150&gt; US 08/723,414

&lt;151&gt; 1996-09-30

&lt;160&gt; 20

&lt;170&gt; PatentIn version 3.0

&lt;210&gt; 1

&lt;211&gt; 1244

&lt;212&gt; DNA

&lt;213&gt; Glycine max

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aggtttggat gtgataaacc agatcaaaac agcggtggaa aatgcttgc ctaacacagt 360  
 ttcttgct gatattcttg ctcttctgc tgaaatatca tctgatctgg caaatggtcc 420  
 tacttggcaa gttccattag gaagaaggga tagttgaca gcaaataatt cccttgcagc 480  
 tcaaaatctt cctgccccca ctttcaacct tactcgacta aaatctaact ttgataatca 540  
 aaacctcagt actactgatc tagttgact cttaggtggc catacaattg gaagaggtca 600  
 atgcagattt ttcgttgcattatacaa tttcagcaac actggaaacc ccgattcaac 660  
 tcttaacacg acctatttac aaacattgca agcaatatgt cccaatggtg gacctggta 720  
 aaacctaacc gatttggacc caaccacacc agatacattt gactccaact actactccaa 780  
 tctccaagtt ggaaaggcgt tgtttcagag tgaccaagag ctttttcca gaaatggttc 840  
 tgacactatt tctattgtca atagttcgc caataatcaa actctttct ttgaaaattt 900  
 tgtagcctca atgataaaaaa tgggttaatat tggagttta actggatctc aaggtgaaat 960  
 tagaacacag tgtaatgctg tgaatggaa ttcttctgga ttggctactg tagtcaccaa 1020  
 agaattcatca gaagatggaa tggctagctc attctaaata taagcttggaa aaatattgaa 1080  
 gaggttctat aattttgtgc atacatatat ggtatgtcata tgggtgtat tatgttttg 1140  
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<210> 15

<211> 283

<212> PRT

<213> Glycine max

<400> 15

Phe His Asp Cys Phe Val Gln Gly Cys Asp Gly Ser Val Leu Leu Asn  
 1 5 10 15

Asn Thr Asp Thr Ile Glu Ser Glu Gln Asp Ala Leu Pro Asn Ile Asn  
 20 25 30

Ser Ile Arg Gly Leu Asp Val Val Asn Asp Ile Lys Thr Ala Val Glu  
 35 40 45

Asn Ser Cys Pro Asp Thr Val Ser Cys Ala Asp Ile Leu Ala Ile Ala  
 50 55 60

Ala Glu Ile Ala Ser Val Ala Gly Arg Arg Ser Gly Trp Pro Val Pro

65 70 75 80  
Leu Gly Arg Arg Asp Ser Leu Thr Ala Asn Arg Thr Leu Ala Asn Gln  
85 90 95  
Asn Leu Pro Ala Pro Phe Phe Asn Leu Thr Gln Leu Lys Ala Ser Phe  
100 105 110  
Ala Val Gln Gly Leu Asn Thr Leu Asp Leu Val Thr Leu Ser Gly Gly  
115 120 125  
His Thr Ser Gly Arg Ala Arg Cys Ser Thr Phe Ile Asn Arg Leu Tyr  
130 135 140  
Asn Phe Ser Asn Thr Gly Leu Ile His Leu Asp Thr Thr Tyr Leu Glu  
145 150 155 160  
Val Leu Arg Ala Arg Cys Pro Gln Asn Ala Thr Gly Asp Asn Leu Thr  
165 170 175  
Asn. Leu Asp Leu Ser Thr Pro Asp Gln Phe Asp Asn Arg Tyr Tyr Ser  
180 185 190  
Asn. Leu Leu Gln Leu Asn Gly Leu Leu Gln Ser Asp Gln Glu Arg Phe  
195 200 205  
Ser Thr Pro Gly Ala Asp Thr Ile Pro Leu Ser Ile Ala Ser Ala Asn  
210 215 220  
Gln Asn Thr Phe Phe Ser Asn Phe Arg Val Ser Met Ile Lys Met Gly  
225 230 235 240  
Asn Ile Gly Val Leu Thr Gly Asp Glu Gly Glu Ile Arg Leu Gln Cys  
245 250 255  
Asn Phe Val Asn Gly Asp Ser Phe Gly Leu Ala Ser Val Ala Ser Lys  
260 265 270  
Asp Ala Lys Gln Lys Leu Val Ala Gln Ser Lys  
275 280

<210> 16

<211> 355

<212> PRT

<213> *Medicago sativa*

<400> 16

Met Asn Ser Leu Arg Ala Val Ala Ile Ala Leu Cys Cys Ile Val Val  
1 5 10 15  
Val Leu Gly Gly Leu Pro Phe Ser Ser Asn Ala Gln Leu Asp Pro Ser

20	25	30
Phe Tyr Arg Asn Thr Cys Pro Asn Val Ser Ser Ile Val Arg Glu Val		
35	40	45
Ile Arg Ser Val Ser Lys Lys Asp Pro Arg Met Leu Ala Ser Leu Val		
50	55	60
Arg Leu His Phe His Asp Cys Phe Val Gln Gly Cys Asp Ala Ser Val		
65	70	75
Leu Leu Asn Lys Thr Asp Thr Val Val Ser Glu Gln Asp Ala Phe Pro		
85	90	95
Asn Arg Asn Ser Leu Arg Gly Leu Asp Val Val Asn Gln Ile Lys Thr		
100	105	110
Ala Val Glu Lys Ala Cys Pro Asn Thr Val Ser Cys Ala Asp Ile Leu		
115	120	125
Ala Leu Ser Ala Glu Leu Ser Ser Thr Leu Ala Asp Gly Pro Asp Trp		
130	135	140
Lys Val Pro Leu Gly Arg Arg Asp Gly Leu Thr Ala Asn Gln Leu Leu		
145	150	155
Ala Asn Gln Asn Leu Pro Ala Pro Phe Asn Thr Thr Asp Gln Leu Lys		
165	170	175
Ala Ala Phe Ala Ala Gln Gly Leu Asp Thr Thr Asp Leu Val Ala Leu		
180	185	190
Ser Gly Ala His Thr Phe Gly Arg Ala His Cys Ser Leu Phe Val Ser		
195	200	205
Arg Leu Tyr Asn Phe Ser Gly Thr Gly Ser Pro Asp Pro Thr Leu Asn		
210	215	220
Thr Thr Tyr Leu Gln Gln Leu Arg Thr Ile Cys Pro Asn Gly Gly Pro		
225	230	235
Gly Thr Asn Leu Thr Asn Phe Asp Pro Thr Thr Pro Asp Lys Phe Asp		
245	250	255
Lys Asn Tyr Tyr Ser Asn Leu Gln Val Lys Lys Gly Leu Leu Gln Ser		
260	265	270
Asp Gln Glu Leu Phe Ser Thr Ser Gly Ser Asp Thr Ile Ser Ile Val		
275	280	285
Asn Lys Phe Ala Thr Asp Gln Lys Ala Phe Phe Glu Ser Phe Arg Ala		
290	295	300
Ala Met Ile Lys Met Gly Asn Ile Gly Val Leu Thr Gly Asn Gln Gly		
305	310	315
Glu Ile Arg Lys Gln Cys Asn Phe Val Asn Ser Lys Ser Ala Glu Leu		

325

330

335

Gly Leu Ile Asn Val Ala Ser Ala Asp Ser Ser Glu Glu Gly Met Val  
340 345 350

Ser Ser Met  
355

<210> 17

<211> 358

<212> PRT

<213> *Medicago sativa*

<400> 17

Met Asn Ser Leu Ala Thr Ser Met Trp Cys Val Val Leu Leu Val Val  
1 5 10 15

Leu Gly Gly Leu Pro Phe Ser Ser Asp Ala Gln Leu Ser Pro Thr Phe  
20 25 30

Tyr Ser Lys Thr Cys Pro Thr Val Ser Ser Ile Val Ser Asn Val Leu  
35 40 45

Thr Asn Val Ser Lys Thr Asp Pro Arg Met Leu Ala Ser Leu Val Arg  
50 55 60

Leu His Phe His Asp Cys Phe Val Leu Gly Cys Asp Ala Ser Val Leu  
65 70 75 80

Leu Asn Asn Thr Ala Thr Ile Val Ser Glu Gln Gln Ala Phe Pro Asn  
85 90 95

Asn Asn Ser Leu Arg Gly Leu Asp Val Val Asn Gln Ile Lys Leu Ala  
100 105 110

Val Glu Val Pro Cys Pro Asn Thr Val Ser Cys Ala Asp Ile Leu Ala  
115 120 125

Leu Ala Ala Gln Ala Ser Ser Val Leu Ala Gln Gly Pro Ser Trp Thr  
130 135 140

Val Pro Leu Gly Arg Arg Asp Gly Leu Thr Ala Asn Arg Thr Leu Ala  
145 150 155 160

Asn Gln Asn Leu Pro Ala Pro Phe Asn Ser Leu Asp Gln Leu Lys Ala  
165 170 175

Ala Phe Thr Ala Gln Gly Leu Asn Thr Thr Asp Leu Val Ala Leu Ser  
180 185 190

Gly Ala His Thr Phe Gly Arg Ala His Cys Ala Gln Phe Val Ser Arg

195 200 205  
Leu Tyr Asn Phe Ser Ser Thr Gly Ser Pro Asp Pro Thr Leu Asn Thr  
210 215 220  
Thr Tyr Leu Gln Gln Leu Arg Thr Ile Cys Pro Asn Gly Gly Pro Gly  
225 230 235 240  
Thr Asn Leu Thr Asn Phe Asp Pro Thr Thr Pro Asp Lys Phe Asp Lys  
245 250 255  
Asn Tyr Tyr Ser Asn Leu Gln Val Lys Lys Gly Leu Leu Gln Ser Asp  
260 265 270  
Gln Glu Leu Phe Ser Thr Ser Gly Ala Asp Thr Ile Ser Ile Val Asn  
275 280 285  
Lys Phe Ser Thr Asp Gln Asn Ala Phe Phe Glu Ser Phe Lys Ala Ala  
290 295 300  
Met Ile Lys Met Gly Asn Ile Gly Val Leu Thr Gly Thr Lys Gly Glu  
305 310 315 320  
Ile Arg Lys Gln Cys Asn Phe Val Asn Phe Val Asn Ser Asn Ser Ala  
325 330 335  
Glu Leu Asp Leu Ala Thr Ile Ala Ser Ile Val Glu Ser Leu Glu Asp  
340 345 350  
Gly Ile Ala Ser Val Ile  
355  
<210> 18  
<211> 347  
<213> PRT  
<213> *Medicago sativa*  
  
<400> 18  
Met Trp Cys Val Val Leu Leu Val Val Leu Gly Gly Leu Pro Phe Ser  
1 5 10 15  
Ser Asp Ala Gln Leu Ser Pro Thr Phe Tyr Ser Lys Thr Cys Pro Thr  
20 25 30  
Val Ser Ser Ile Val Ser Asn Val Leu Thr Asn Val Ser Lys Thr Asp  
35 40 45  
Pro Arg Met Leu Ala Ser Leu Val Arg Leu His Phe His Asp Cys Phe  
50 55 60  
Val Leu Gly Cys Asp Ala Ser Val Leu Leu Asn Asn Thr Ala Thr Ile

65	70	75	80
Val Ser Glu Gln Gln Ala Phe Pro Asn Asn Asn Ser Leu Arg Gly Leu			
85		90	95
Asp Val Val Asn Gln Ile Lys Thr Ala Val Glu Ser Ala Cys Pro Asn			
100		105	110
Thr Val Ser Cys Ala Asp Ile Leu Ala Leu Ala Gln Ala Ser Ser Val			
115		120	125
Leu Ala Gln Gly Pro Ser Trp Thr Val Pro Leu Gly Arg Arg Asp Gly			
130		135	140
Leu Thr Ala Asn Arg Thr Leu Ala Asn Gln Asn Leu Pro Ala Pro Phe			
145		150	155
Asn Ser Leu Asp His Leu Lys Leu His Leu Thr Ala Gln Gly Leu Ile			
165		170	175
Thr Pro Val Leu Val Ala Leu Ser Gly Ala His Thr Phe Gly Arg Ala			
180		185	190
His Cys Ala Gln Phe Val Ser Arg Leu Tyr Asn Phe Ser Ser Thr Gly			
195		200	205
Ser Pro Asp Pro Thr Leu Asn Thr Thr Tyr Leu Gln Gln Leu Arg Thr			
210		215	220
Ile Cys Pro Asn Gly Gly Pro Gly Thr Asn Leu Thr Asn Phe Asp Pro			
225		230	235
Thr Thr Pro Asp Lys Phe Asp Lys Asn Tyr Tyr Ser Asn Leu Gln Val			
245		250	255
Lys Lys Gly Leu Leu Gln Ser Asp Gln Glu Leu Phe Ser Thr Ser Gly			
260		265	270
Ala Asp Thr Ile Ser Ile Val Asp Lys Phe Ser Thr Asp Gln Asn Ala			
275		280	285
Phe Phe Glu Ser Phe Lys Ala Ala Met Ile Lys Met Gly Asn Ile Gly			
290		295	300
Val Leu Thr Gly Thr Lys Gly Glu Ile Arg Lys Gln Cys Asn Phe Val			
305		310	315
Asn Ser Asn Ser Ala Glu Leu Asp Leu Ala Thr Ile Ala Ser Ile Val			
325		330	335
Glu Ser Leu Glu Asp Gly Ile Ala Ser Val Ile			
340		345	

<210> 19

<211> 351

<212> PRT

<213> *Medicago sativa*

<400> 19

Met Leu Gly Leu Ser Ala Thr Ala Phe Cys Cys Met Val Phe Val Leu  
1 5 10 15

Ile Gly Gly Val Pro Phe Ser Asn Ala Gln Leu Asp Pro Ser Phe Tyr  
20 25 30

Asn Ser Thr Cys Ser Asn Leu Asp Ser Ile Val Arg Gly Val Leu Thr  
35 40 45

Asn Val Ser Gln Ser Asp Pro Arg Met Leu Gly Ser Leu Ile Arg Leu  
50 55 60

His Phe His Asp Cys Phe Val Gln Gly Cys Asp Ala Ser Ile Leu Leu  
65 70 75 80

Asn Asp Thr Ala Thr Ile Val Ser Glu Gln Ser Ala Pro Pro Asn Asn  
85 90 95

Asn Ser Ile Arg Gly Leu Asp Val Ile Asn Gln Ile Lys Thr Ala Val  
100 105 110

Glu Asn Ala Cys Pro Asn Thr Val Ser Cys Ala Asp Ile Leu Ala Leu  
115 120 125

Ser Ala Glu Ile Ser Ser Asp Leu Ala Asn Gly Pro Thr Trp Gln Val  
130 135 140

Pro Leu Gly Arg Arg Asp Ser Leu Thr Ala Asn Asn Ser Leu Ala Ala  
145 150 155 160

Gln Asn Leu Pro Ala Pro Thr Phe Asn Leu Thr Arg Leu Lys Ser Asn  
165 170 175

Phe Asp Asn Gln Asn Leu Ser Thr Thr Asp Leu Val Ala Leu Ser Gly  
180 185 190

Gly His Thr Ile Gly Arg Gly Gln Cys Arg Phe Phe Val Asp Arg Leu  
195 200 205

Tyr Asn Phe Ser Asn Thr Gly Asn Pro Asp Ser Thr Leu Asn Thr Thr  
210 215 220

Tyr Leu Gln Thr Leu Gln Ala Ile Cys Pro Asn Gly Gly Pro Gly Thr  
225 230 235 240

Asn Leu Thr Asp Leu Asp Pro Thr Pro Asp Thr Phe Asp Ser Asn  
245 250 255

Tyr Tyr Ser Asn Leu Gln Val Gly Lys Gly Leu Phe Gln Ser Asp Gln

260 265 270  
Glu Leu Phe Ser Arg Asn Gly Ser Asp Thr Ile Ser Ile Val Asn Ser  
275 280 285  
Phe Ala Asn Asn Gln Thr Leu Phe Phe Glu Asn Phe Val Ala Ser Met  
290 295 300  
Ile Lys Met Gly Asn Ile Gly Val Leu Thr Gly Ser Gln Gly Glu Ile  
305 310 315 320  
Arg Thr Gln Cys Asn Ala Val Asn Gly Asn Ser Ser Gly Leu Ala Thr  
325 330 335  
Val Val Thr Lys Glu Ser Ser Glu Asp Gly Met Ala Ser Ser Phe  
340 345 350

<210> 20

<211> 22

<212> DNA

<213> *Medicago sativa*

<400> 20

taaaaatcata tcagcttact cc